

is more rapid than a temperature change of the first object in response to heat, and wherein said second object is positioned in the vicinity of the first object for exchanging heat therebetween such that said second object assumes a temperature approximately equal to that of the first object in the absence of heat generation therein;

(c) measuring the temperature of one of the first and second objects by a temperature detector;

A²
(cont'd)
(d) estimating the temperature of the other of the first and second objects using a first method in which the temperature of the other of the first and second objects is estimated on the basis of the temperature measured in the step (c) and a specific value that substantially indicates the amount of the energization of the second object;

(e) estimating the temperature of the other of the first and second objects using a second method which is different from said first method; and

(f) detecting an abnormality of at least one of the detector, a system for the first object and a system for the second object based on the temperature estimated by the first method and the temperature estimated by the second method.

8. (Amended) A temperature estimation device for estimating a temperature of one of first and the second objects from the temperature of the other object, comprising:

A³
a temperature measuring portion for measuring the temperature of one of the first and second objects by a temperature detector; and

an estimation portion for estimating the temperature of the other of the first and second objects using a first method in which the temperature of the other of the first and second objects is estimated on the basis of the temperature measured by the temperature determination portion and a specific value substantially indicating the amount of energization of the second object, for estimating the temperature of the other of the first and second